



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/752,938 | 12/29/2000 | Han-Ming Wu | 42390.P10058 | 9229 |

7590 04/29/2002

Brent E. Vecchia
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER

NGUYEN, HUNG

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2851

DATE MAILED: 04/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/752,938

Applicant(s)

WU ET AL.

Examiner

Henry Hung V Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 08 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 2851

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I (claims 1-17) in Paper No. 3 is acknowledged.

Abstract

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the following legal phraseology should be omitted:

"means" line 6. Correction is required.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "the rotary vacuum generator including the rotor and a compression chamber" (see claim 7) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. As to claim 1, the recitation of "substantially different composition" renders the claim indefinite. That is, when a term of degree is used as a limitation, it is necessary to determine whether the specification provides some standard for measuring that degree. In this case, the specification does not enable one skilled in the art to reasonably establish what may be construed as being within the metes and bounds of the term of degree. Therefore, one of ordinary skill in the art would not be apprised as to the claimed invention's scope when the claims are read in light of the specification.

The recitation of "a vent to add...than the second gas" is ambiguous and indefinite.

b. The meaning, breath, scope of the following term is ambiguous and not clearly understood:

"particular" in line 5.

c. Claim 1 recites the limitation "'the particular photolithographic radiation" in 5. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 2851

d. As to claim 2, the recitation of "having a higher concentration of the first gas...through the vent" is vague and not clearly understood.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1, 4-6, 10, 12, 13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Klebanoff et al (U.S. Pat. 6,153,044).

As best the claimed subject matters are understood (see rejection under 35 U.S.C. 112, second paragraph, supra). Claims are anticipated by reference.

With respect to claims 1, 4-6, 10, 12, 13 and 15, Klebanoff et al discloses an exposure system having a reticle protective system (100) for keeping the reticle from particle contamination and comprising all basic features of the instant claims such as: an enclosure (110) for surrounding a reticle (120) "which includes a pattern defined at least in part by an opaque

Art Unit: 2851

portion that is opaque to the particular photolithographic radiation" is well known per se; a wall (110) defining a gas filled enclosure (see fig.1); and at least one gas inlet means 130, such as valve, for adding first gas and to the enclosure and for removing second gas (127) from the enclosure (see col.3, lines 33-39) wherein the first gas (clean gas) having "a substantially different composition than the second gas (gas with particles deposition) and a radiative heat source can be used (see col.6, lines 2 to 22) so that the temperature of the gas in the diffusion purged enclosure (110) can be changed and for generating "radiation with a different wavelength than the photolithography radiation".

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klebanoff et al (U.S.Pat. 6,153,044) in view of Wang (U.S.Pat. 5,453,816).

As to claims 2 and 16, Klebanoff et al teaches a reticle protective device comprising all of the limitations of the claims as discussed above except for the protective device being attached to the reticle with an adhesive. Wang teaches using an adhesive (see abstract) for attaching a protective mask to a pellicle. It would have been obvious to a skilled artisan to incorporate the teachings of Wang and Klebanoff to obtain the invention as specified in claims 2 and 16. It would have been obvious to one having ordinary skill in the art at the time the invention was

Art Unit: 2851

made to apply "an adhesive" as taught by Wang into the system of Klebanoff in order to attach the reticle protective device and the reticle.

10. Claims 3, 7-9, 11, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klebanoff et al (U.S.Pat. 6,153,044).

As to claims 3, 7-8, 11, 14 and 17, Klebanoff et al discloses substantially all of the limitations of the instant claims as discussed including "a perfect vacuum" (see col.4, lines 10-11). (It is the examiner's position that "a rotary vacuum generator including a rotor and compressing chamber" are seen to be inherent elements of the vacuum as disclosed by Klebanoff). Klebanoff et al does not expressly disclose the first gas having higher concentration than the enclosure and a second gas having lower concentration than the enclosure as well as the first gas having higher transmissivity for the photolithography radiation than the second gas or the pressure of the first gas and the second gas as specified in the above claims. However, supplying inert gas having less absorption spectrum in the exposure wavelength and high transmissivity of the photolithography radiation, such as Nitrogen, argon, etc... is well known per se. For example, Klebanoff et al teaches "any gas can used to maintain the pressure in the interior of the pellicle enclosure, however, a gas having a low molecular weight and high viscosity such as H₂, He, or Ne is preferred" (see col.5, lines 26-32). Klebanoff et al further teaches "the gas pressure must be sufficiently high to enable sufficient collisions between gas molecules and particles to develop a thermosphoretic force.....pressure above about 100 mTorr are sufficient" (see col.4, lines 5-15). This provides a concrete evidence that it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the first gas having high concentration and the second gas having lower concentration comparing to

Art Unit: 2851

the enclosure in the device of Klebanoff as well as to set the pressure inside the enclosure (for example to below 500 mm of Hg) as specified in the instant claims for at least the purpose of increasing the transmissivity for the photolithography radiation and thus improving the performance of the exposure apparatus.

With respect to claim 9, Klebanoff et al does not expressly teach "the vent has a surface area on the wall is at least 5% of a total area of the wall". It would have been an obvious matter of design choice to select "the vent has a surface area on the wall is at least 5% of a total area of the wall" since such selecting would have been involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Prior Art Made of Record

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

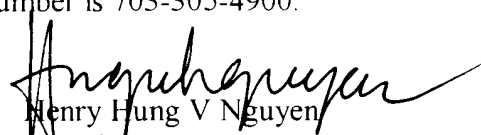
Maldonado et al (U.S.Pat. 5,793,836); Campi, Jr (U.S.Pat. 5,529,819); Chiba et al (U.S.Pat. 6,317,479); Miyaji et al (U.S.Pat. 5,559,584); Kuo (U.S.Pat. 5,814,381) discloses lithographic device, each of which comprises substantially all element as recited in the instant application.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Hung V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

Art Unit: 2851

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7723 for regular communications and 703-305-7723 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.


Henry Hung V. Nguyen
Examiner
Art Unit 2851

hvn
April 23, 2002